AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A communication system for efficiently transmitting information signals that were formatted in variable sized packets of more than a minimum size by using time division transmission of packet segments and allocating available bandwidth on demand, said system comprising:

a satellite/wireless network;

at least two sites, each comprising a plurality of terminals operative to transmit and receive signals via said satellite/wireless network and a local area network for interconnecting said terminals at a common site, each said terminals comprising:

(a) a modem for transmitting signals from a terminal on predetermined channels having a predetermined bandwidth;

(b) means for time dividing data signals input to said terminal from an external location and for assembling said time divided data signals as bursts within repeated frames, each frame having a unique frame header;

(c) means for dividing information signals arranged in variable sized packets into a plurality of segments;

(d) means for combining each segment in said plurality of segments with a unique segment and reassembly header to form a SAR segment;

(e) means for combining said SAR segments representing a single packet with a unique frame header to form a SAR frame; and

(f) means for selectively appending a terminal ID header to each said SAR frame for transmission in a burst from a modem.

2. (original): The communication system as set forth in claim 1 wherein each terminal further comprises:

(g) means for detecting said SAR frame and for dividing said SAR frame into SAR segments;

(h) means for rearranging the segments in said SAR segments on the basis of said SAR header; and

(i) means for reassembling said packets on the basis of said rearranged segments.

3. (original): The communication system as set forth in claim 2 further comprising means for receiving a SAR frame on the basis of said terminal ID information.

4. (original): The communication system as set forth in claim 2 wherein said SAR frame comprises information defining the total length of said plurality of SAR Segments representing a single packet.

5. (original) The communication system as set forth in claim 2 wherein said SAR segment comprises at least a signal identifying the packet sequence number for said segment.

6. (original): The communication system as set forth in claim 2 wherein said SAR segment comprises at least a signal identifying a SAR id of such header.

7. (original): The communication system as set forth in claim 2 wherein said SAR segment comprises at least a signal indicating whether a given segment is first or last among said plurality of segments defining a variable size packet.

8. (original): The communication system as set forth in claim 2 wherein said SAR segment comprises at least a signal identifying at least one receiving modem for said packet.

9. (original): The communication system as set forth in claim 2 wherein said terminal ID header comprises at least one of control group, site and unit information.

10. (original): The communication system as set forth in claim 2 wherein said SAR header comprises one byte having identification information about a sending terminal and a receiving terminal.

11. (original): The communication system as set forth in claim 10 wherein said SAR segment is for point to point bursts between sites having only one terminal each.

12. (original): The communication system as set forth in claim 1 further comprising means for detecting the needed bandwidth for transmitting information signals and for allocating segments of a single packet to respective ones of multiple modems.

13. (original): The communication system as set forth in claim 2 further comprising a central network controller for assigning bandwidth among plural modems on a per packet basis.

14. (original): The communication system as set forth in claim 2 further comprising a controller distributed among plural modems for assigning bandwidth among plural modes on a per packet basis.

15. (original): The communication system as set forth in claim 2 further comprising means for filling a SAR segment with fill data when said packet does not have sufficient data to completely fill a segment.

16. (original): The communication system as set forth in claim 2 wherein said SAR segment has a uniform size data content.

17. (original) The communication system as set forth in claim 16 wherein said size is identical to the size of an ATM cell.

18. (original): The method of transmitting information arranged in packets from one location to a second location via a wireless/satellite network, comprising:

(a) examining each packet to determine whether its size is equal to a minimum;

(b) if a minimum size, generating a first SAR header and applying said header to said packet to form a SAR segment;

(c) if greater than a minimum size, dividing said packet into a plurality of segments having a uniform size, generating a second SAR header that is unique for each segment and applying said header to a respective one of said segments to form SAR segments[:]; and

(d) forwarding said SAR segments to one or more modems for transmission to at least one terminal at said second location.

19-27. (canceled).

23. (cancelled): A segmentation and reassembly cell comprising a segment of a packet and a header comprising at least a packet sequence number for uniquely identifying a packet to which said segment relates, a SAR id for uniquely identifying the segment among all segments derived from the packet, and a destination id for uniquely identifying the destination for the packet.

24. (cancelled): A segmentation and reassembly cell as set forth in claim 23 further comprising a first and last segment indicator.

25. (cancelled): A communication method for reassembling segments transmitted by a satellite/wireless network in a time divided manner by discrete bursts that identify the terminals by at least one of unit, site and control group, comprising:

selecting a modem and receiving a burst at said selected modem on the basis of common addresses in said burst;

sorting segments within a burst received by said modem to restore the original order of the segments prior to transmission;

resequencing said sorted segments in a queue at a selected one of a plurality of locations on the basis of a burst slot and key; and

combining said segments at each of said plurality of locations to reassemble a packet.

26. (canceled).

27. (cancelled): The method as set forth in claim 25 wherein segments received in bursts are processed in the order received in the burst.